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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/634,823	08/08/2000	Patrick Joseph Curran	200-0067	4286

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EXAMINER	
KING, BRADLEY T	
ART UNIT	PAPER NUMBER

3683

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/634,823

Applicant(s)

CURRAN ET AL.

Examiner

Bradley T King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,8-10 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,8-10 and 12-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 16 recites a method for braking within a vehicle including the step of "reducing the amount of regenerative brake relative to the total braking force". The specification fails to adequately support this method step. While the disclosure states that the modules can be programmed to provide a significant majority of the braking force through use of the friction brakes, the disclosure lacks a braking method including a step where the amount of regenerative braking force relative to the total braking is reduced. Instead, it appears from the specification that a ratio smaller than conventionally used in prior art systems is selected.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-4, 6, 8-9, and 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a first portion comprising a motor control module and an electric motor, said motor control module which is coupled to said first pair of wheels". The meaning of this limitation is unclear as it appears that the electric motor is coupled to the first pair of wheels, not the control module.

Claims 1, and 8 recite "each of said wheels". It is unclear if "said wheels" refers to the first pair of wheels, the second pair of wheels, or all of the wheels.

Claims 1 and 14 recite "relatively rapidly". The word "relatively" renders the claim indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, 8-10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidston et al (US# 5615933) in view of JP 11-78839.

Kidston et al discloses a braking system with a first portion including a motor control module 22 and an electric motor 18, the motor control module which is coupled to the first pair of wheels (24, 26), a communications bus 59, a second portion 15 which

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is communicatively connected to the first portion by the communications bus and which selectively provides an antiskid braking function at the first and second pair of wheels, the second portion including an antiskid module 66 and two pairs of frictional braking members (36, 38, 48, 50) which are respectively and operatively coupled to the first and second pair of wheels, the antiskid control module 66 being effective to detect antiskid braking events at each of said wheels, and an auxiliary bus (60, 62, or 64) which is only disposed between the motor control module and the antiskid module, the auxiliary bus only transmits unencoded signals between the motor control module, effective to permit the motor control module to communicate with the antiskid module rapidly (column 4, lines 13-15), wherein the antiskid control module communicates through both buses to the first portion, effective to selectively disable the regenerative braking function.

Kidston et al lack the disclosure of the communications bus being encoded. It is well known in the art to use encoding to allow multiple modules to share the same bus (also note page 7 of the instant disclosure which describes a conventional "CAN" bus).

Further note that the communications bus of Kidston et al is disclosed as a serial data link, which is commonly used in the art to form a segment of a CAN bus. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize encoding in the bus of Kidston et al to allow multiple devices to utilize the same bus (CAN bus), thereby simplifying the communication system of the vehicle. Kidston et al further lack disabling the regenerative braking only when the first pair of wheels are in antiskid braking. JP 11-78839 teach the this feature to increase the amount of energy regained through regenerative braking (see column 3, lines 45-50 of US equivalent US

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6231134). It would have been obvious to one of ordinary skill in the art at the time the invention was made to disable regenerative braking only when the drive wheels (first pair of wheels) of Kidston et al are in antiskid control to increase the amount of energy gained through regenerative braking, thereby increasing the efficiency of the vehicle.

Claims 3-4, 12-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kidston et al (US# 5615933) and JP 11-78839) as applied to claims 1, 8 and 14 above, and further in view of Kade et al (US#5511859).

Kidston et al and JP 11-78839 as applied to claims 1, 8 and 14 above discloses all the limitations of the instant claims with exception to the explicit disclosure of precluding regenerative braking when the battery is full. Kidston et al recognize the need to limit the regenerative braking based on state of charge of the battery (see column 6, lines 19-23), but fails to explicitly disclose the preclusion of regenerative braking when the battery is full. Kade et al disclose a similar braking system where the determination of regenerative braking based on the charge state of the battery and regenerative braking is precluded when the battery is fully charged (see column 6, lines 25-31). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to preclude regenerative braking when the battery is at full charge in the system of Kidston et al and JP 11-78839 as taught by Kade et al to prevent damage to the battery and electrical system.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maisch et al and Schramm et al. Both show brake communication systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley T King whose telephone number is (703) 308-8346. The examiner can normally be reached on 11:00-7:30 M-F.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

BTK
January 26, 2003


DOUGLAS C. BUTLER
PRIMARY EXAMINER
1/27/03
AU 3683